

# Installing QST

- Always check you have the latest version by going to <https://sourceforge.net/projects/qstonline/>

QST should only be run under SSL.

Ubuntu/Linux installation instructions after Windows Install.

AWS install after Ubuntu/Linux. LDAP after linux.

Mac install at end.

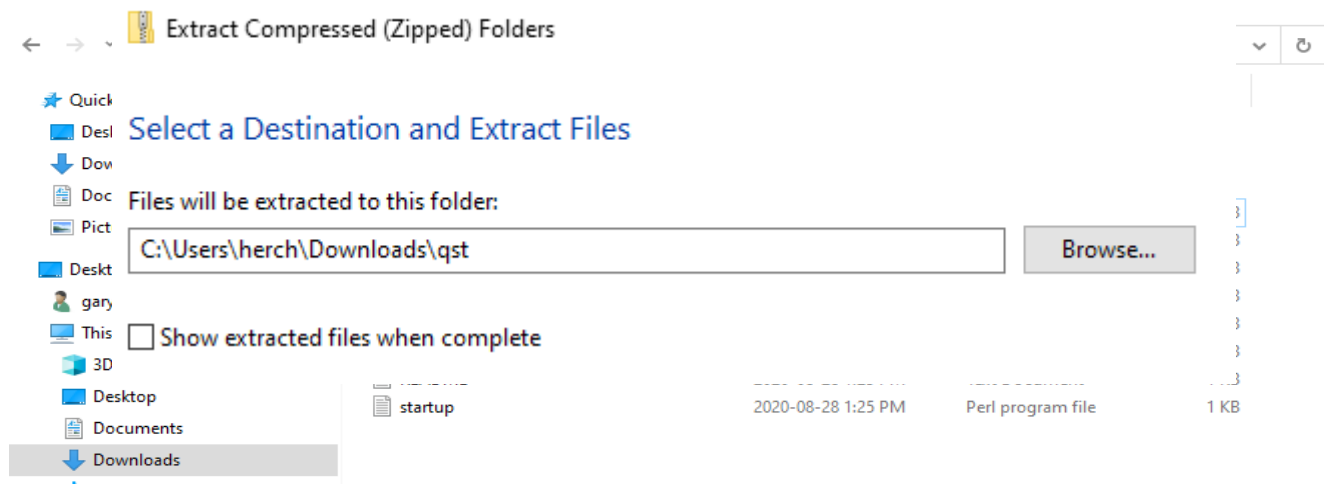
If you are upgrading, read the README.txt file.

---

## WINDOWS 10/11 INSTALL

QST writes errors to C:\Apache24\logs\error.log.

Extract qst.zip in your Downloads folder (will create a folder called qst\_gpl).



Go to the folder qst\qst\_gpl\qst\WINQST\_files in your Downloads folder.

-----  
Install Apache

Extract the httpd-2.4.43-win64-VS16 to [C:\](#) , so we end up with it at [C:\Apache24](#) (that is the ServerRoot in the config)

The default folder for your webpages is DocumentRoot "C:\Apache24\htdocs"

When you extract to another location:

change Define SRVROOT "C:\Apache24" in httpd.conf, for example to "E:\Apache24"

Run and test:

Open a command prompt window.

To Start Apache in the command prompt type:

```
cd \Apache24\bin
```

Press enter.

then type:

```
httpd.exe
```

Press Enter.

If there are any errors it will tell you.

Warnings will not stop Apache from working, they do need to be addressed none the less.

If there are no errors the cursor will sit and blink on the next line.

You can test your installation by opening up your Browser and typing in the address:

```
http://localhost
```

You can shut down Apache by pressing Ctrl+C (It may take a few seconds)

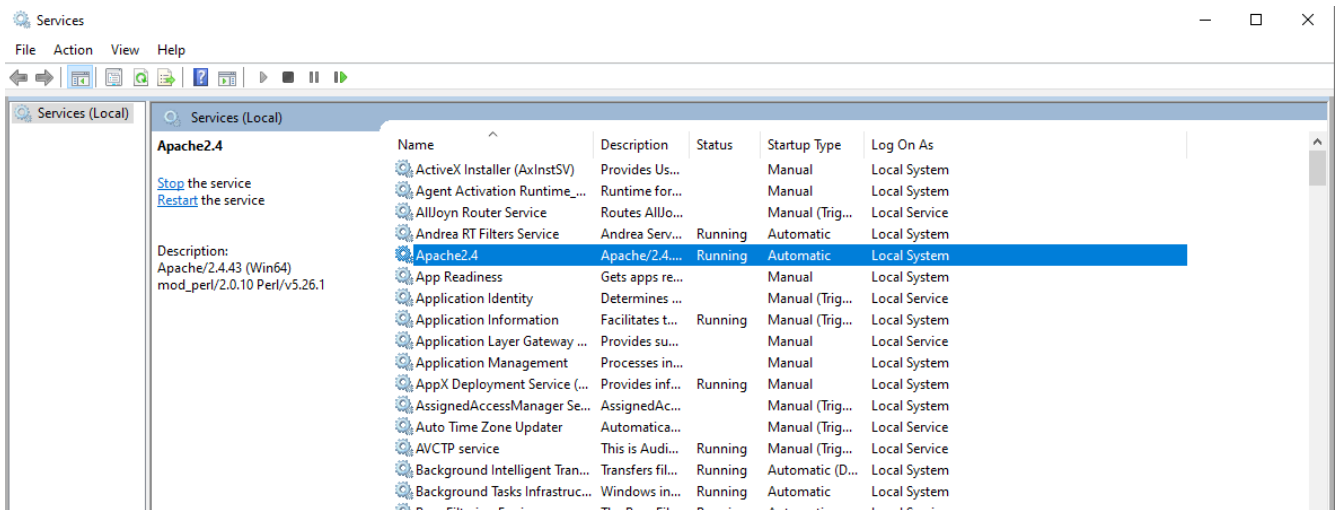
To restart Apache type:

```
httpd -k restart
```

To install as a service. Open command prompt as Administrator and type:

```
>httpd.exe -k install
```

Then, you can click Start -> Windows Administrative Tools -> Services and can start and stop it here. Right click on Apache2.4 and click Start or Stop.



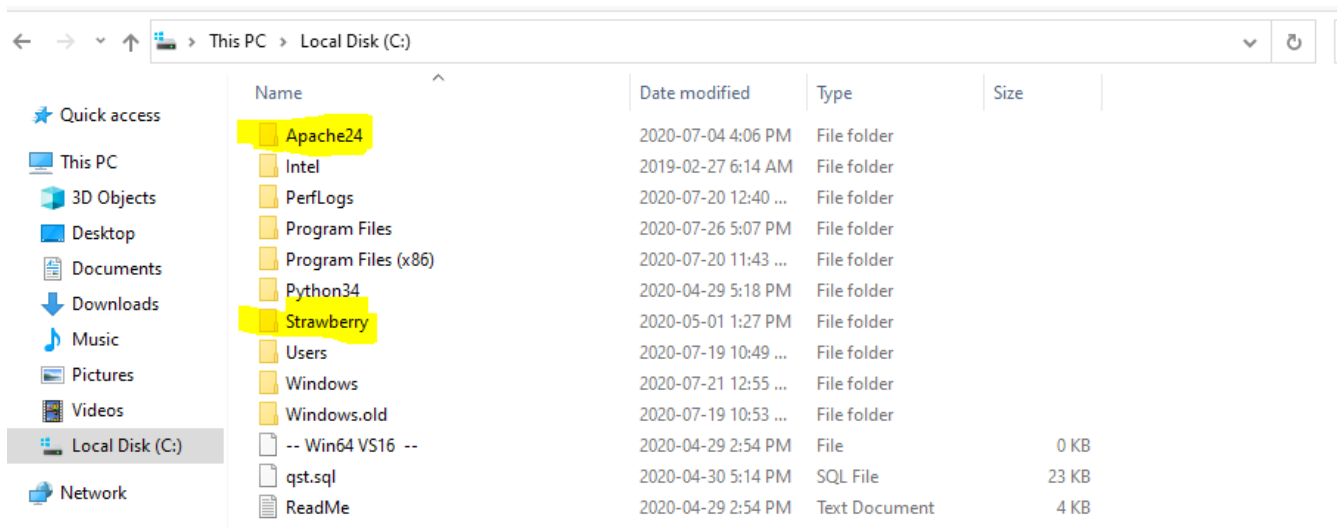
Perl

Run strawberry-perl-5.26.1.1-64bit  
Install to C:\Strawberry.

Under [C:\Strawberry](#) you should now see folders:

cpan, c, perl, licenses, and win32

-----



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## ModPerl

Unzip mod\_perl-2.0.10-strawberryperl.5.26.1.1-64bit.zip .

Go to the unzipped folder.

Copy the folders (bin, include, lib, modules) under Apache24 to  
C:\Apache24

Copy the perl folder under Strawberry to [C:\Strawberry](#)  
It will replace the perl folder already there.

-----

Open C:\Apache24\conf\httpd.conf

Add the following line after the list of LoadModules:  
LoadModule perl\_module modules/mod\_perl.so

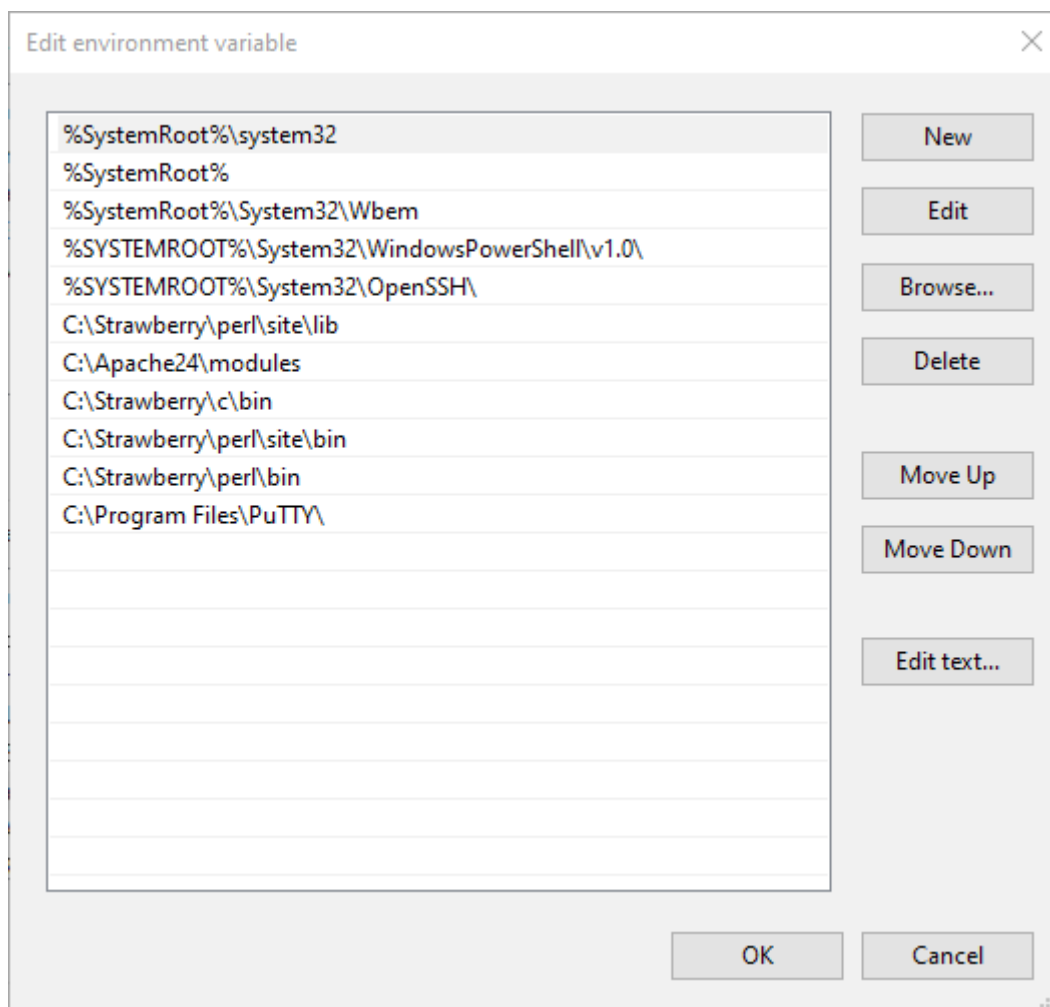
Save file.

-----

Go to Windows Windows System > Control Panel > System and Security > System >  
Advanced System Settings > Environment Variables > System Variables > Click on Path  
> Edit > New >

C:\Apache24\modules  
C:\Strawberry\perl\site\lib

> OK > OK > OK. Be sure not to corrupt anything that's already there.



Make sure Apache is installed and running correctly.

To Start Apache in the command prompt type:

```
cd \Apache24\bin
```

Press enter.

then type:

```
httpd.exe
```

Press enter.

Go to <http://localhost/>.

You should see the Apache 'splash page' if Apache is working properly.

Do not proceed unless Apache is working.

-----  
Install Visual Studio 2013

You are missing VCRUNTIME140.dll which is part of visual studio 2013 and you should go to microsoft and download vc\_redist\_x86.exe and vc\_redist\_x64.exe and install them. This used to get installed with MySQL but no longer from what we encountered.

-----  
Install MySQL

The MySQL installer now asks if you want to upgrade, you don't.

Run mysql-installer-web-community-5.7.29.0  
Choose Server Only  
Next  
Click on MySQL server and click Execute  
Next or execute  
Choose Standalone MySQL Server  
Next  
Config Type: Server Computer  
Next  
MySQL root password: your choice  
Write down password you entered.  
Add User  
Username: qstuser  
Host: localhost  
Role: DB Manager  
Password: Qstyreg#389  
OK  
Next  
Execute  
Finish

In windows Start Menu click on MySQL Command line client  
In Dos window enter your root password from above, then:

```
mysql>CREATE DATABASE qst;

mysql>create user 'qst'@'localhost' identified by 'Qst#captain2';

mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO 'qst'@'localhost';

mysql>exit
```

Install the database tables:

- qst.sql is in your qst\_gpl\qst folder (in your Downloads)

Copy qst.sql to C:\Strawberry

At command prompt type:

cd Program Files\MySQL\MySQL Server 5.7\bin

Press enter.

Then type in:

mysql -u qstuser -p qst < C:\Strawberry\qst.sql

password is Qstyreg#389

Press enter.

Delete qst.sql from C:\Strawberry

Open C:\ProgramData\MySQL\MySQL Server 5.7\my.ini and change the following:

```
max_connections=350
innodb_buffer_pool_size=1028
innodb_thread_concurrency=500
max_connect_errors=200
thread_cache_size=50
```

Under thread\_cache\_size=50

Add:

```
back_log=200
```

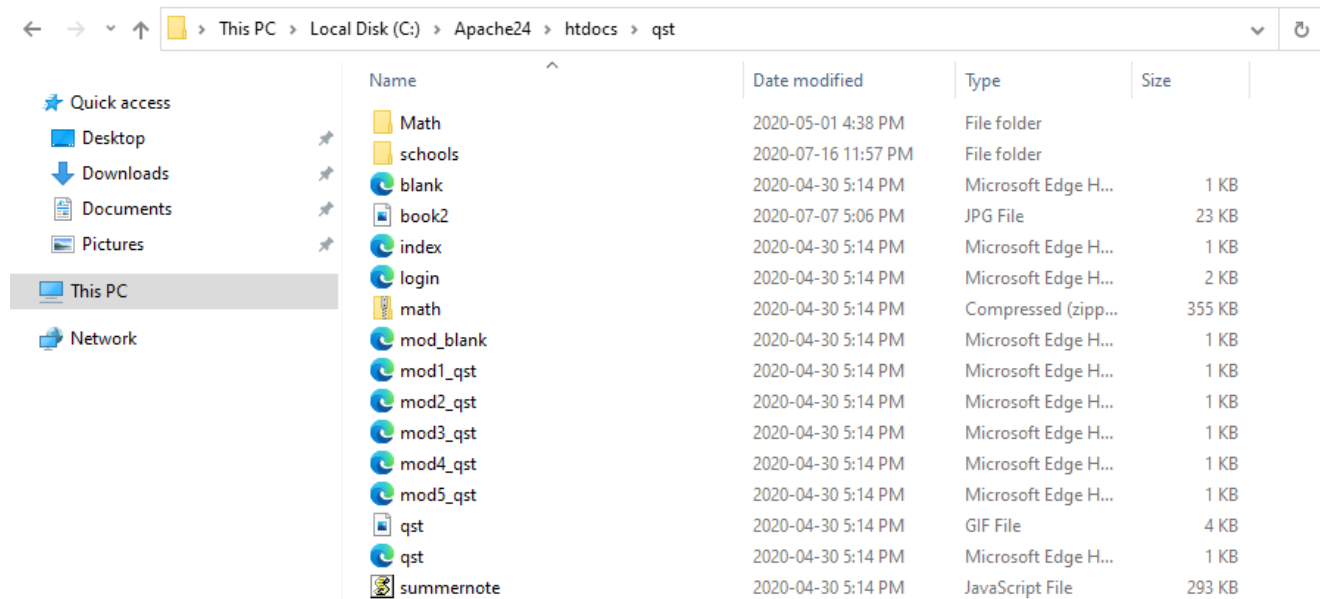
Stop and start MySQL.

-----  
Create the folder C:\Apache24\htdocs\qst

Copy the contents of \qst\qst\_gpl\qst (has index.htm, blank.htm, login.htm, etc. in it) folder (in your Downloads) to C:\Apache24\htdocs\qst\

Create the folder C:\Apache24\htdocs\qst\schools

Copy the contents of \qst\qst\_gpl\schools folder (in your Downloads) to C:\Apache24\htdocs\qst\schools\



Name	Date modified	Type	Size
Math	2020-05-01 4:38 PM	File folder	
schools	2020-07-16 11:57 PM	File folder	
blank	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
book2	2020-07-07 5:06 PM	JPG File	23 KB
index	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
login	2020-04-30 5:14 PM	Microsoft Edge H...	2 KB
math	2020-04-30 5:14 PM	Compressed (zipp...	355 KB
mod_blank	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
mod1_qst	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
mod2_qst	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
mod3_qst	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
mod4_qst	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
mod5_qst	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
qst	2020-04-30 5:14 PM	GIF File	4 KB
qst	2020-04-30 5:14 PM	Microsoft Edge H...	1 KB
summernote	2020-04-30 5:14 PM	JavaScript File	293 KB

-----  
Copy WINQST.pm (under \qst\qst\_gpl\WINQST\_files folder) to C:\Strawberry\perl\site\lib\Apache\  
Rename WINQST.pm to QST.pm

Name	Date modified	Type	Size
SizeLimit	2020-05-01 1:30 PM	File folder	
AuthDBI	2013-06-12 1:26 AM	PM File	58 KB
DBI	2013-06-12 1:22 AM	PM File	21 KB
QST	2020-08-12 4:01 PM	PM File	2,754 KB
Reload	2020-05-01 1:04 AM	PM File	9 KB
SizeLimit	2020-05-01 1:04 AM	PM File	17 KB
Test	2020-05-01 1:04 AM	PM File	30 KB
Test5005compat	2020-05-01 1:04 AM	PM File	2 KB
TestBuild	2020-05-01 1:04 AM	PM File	15 KB
TestClient	2020-05-01 1:04 AM	PM File	6 KB
TestCommon	2020-05-01 1:04 AM	PM File	3 KB
TestCommonPost	2020-05-01 1:04 AM	PM File	6 KB
TestConfig	2020-05-01 1:04 AM	PM File	60 KB
TestConfigC	2020-05-01 1:04 AM	PM File	12 KB
TestConfigParrot	2020-05-01 1:04 AM	PM File	3 KB
TestConfigParse	2020-05-01 1:04 AM	PM File	16 KB
TestConfigPerl	2020-05-01 1:04 AM	PM File	20 KB
TestConfigPHP	2020-05-01 1:04 AM	PM File	18 KB
TestHandler	2020-05-01 1:04 AM	PM File	6 KB
TestHarness	2020-05-01 1:04 AM	PM File	6 KB
TestHarnessPHP	2020-05-01 1:04 AM	PM File	5 KB
TestMB	2020-05-01 1:04 AM	PM File	12 KB
Test+MM	2020-05-01 1:04 AM	PM File	0 KB

Copy the httpd.conf file supplied under the qst\qst\_gpl\qst\WINQST\_files folder (in your Downloads) to C:\Apache24\conf\

Install Perl modules For Strawberry perl (at C:\ prompt) as administrator.

- if you get a complaint about not being a recognized program, restart your computer.

run:

```
cpan -i Apache::DBI
cpan -i Net::DNS
cpan -i Net::LDAP
cpan -i Crypt::PBKDF2
cpan -i MIME::Base64
cpan -i Archive::Zip
cpan -i Exporter
```

Restart the apache server.

Go to localhost in your web browser and enter the info. below:

```
username: admin
pass: qstcaptain
```

\*\*\*\*\* Change the password!!  
Click on Server then Administration.

Click on Head Administrator and select Password. Change the password and Save it.

To set up SSL:

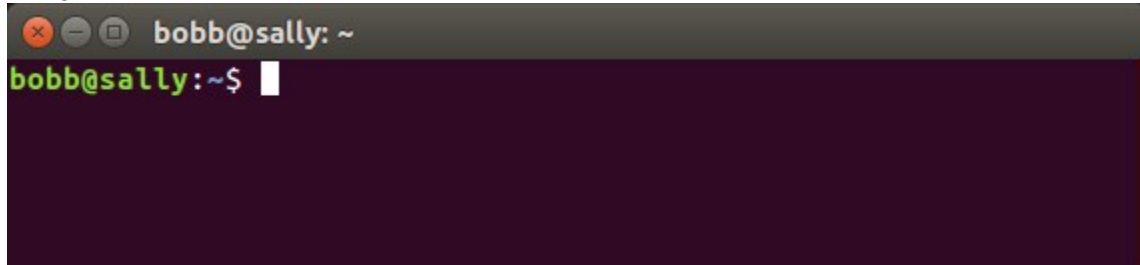
Go to <https://letsencrypt.org/> to get a certificate:  
Use letsencrypt-win-simple client

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## UBUNTU/LINUX Install:

Everything should be done in a terminal window.

The



install of MySQL will install their latest stable release 8.x .

When unzipped, the files will be under qst\_gpl directory.

Installation on Ubuntu 20.x.

- the version of Perl you are running is 5.30.0 (this comes standard with Ubuntu 20.x)

- Other versions of Ubuntu:

- get the version of perl, run:  
perl -v

- if different then 5.30 you will have to change /home/MyApache2/startup.pl to reflect the path to perl with the version number  
eg. /usr/local/lib/x86\_64-linux-gnu/perl/5.30  
change the 5.30 to the version number displayed by running the above

- mod\_perl is version 2.x

- QST writes errors to /var/logs/apache2/error.log

1. run:

```
sudo apt-get install build-essential
```

- install apache 2

```
sudo apt install apache2
```

```
sudo service apache2 start
```

```
sudo service apache2 stop
```

- install mod\_perl



```
sudo apt-get -f install
sudo apt-get -y install libapache2-mod-perl2
```

```
run: sudo a2enconf mod_perl
run: a2enmod perl.load
```

Enabling conf mod\_perl.

To activate the new configuration, you need to run:

```
service apache2 reload
or
systemctl restart apache2
```

```
under /var/www run:
sudo mkdir qst
```

```
then under /var/www/qst run:
sudo mkdir schools
sudo chmod 777 schools
```

```
then under /var/www/qst/schools run:
sudo mkdir qst_files
sudo chmod 777 qst_files
```

```
then under /var/www/qst/schools/qst_files run:
sudo mkdir photos
sudo chmod 777 photos
```

```
cd to /etc/apache2/sites-available
sudo vi 000-default.conf
change Document root to /var/www/qst
save
run:
cd /home
sudo mkdir MyApache2
cd 'to directory you unzipped qst into'
sudo cp QST.pm /home/MyApache2
sudo cp startup.pl /home/MyApache2
cd /home/MyApache2
chmod 711 startup.pl
chmod 715 QST.pm
```

```
run:
sudo vi /etc/apache2/apache2.conf
```

Paste the following in above # AccessFileName: The name of the file to look for in each directory :

```
StartServers 10
MaxRequestWorkers 10000
ServerLimit 100
ThreadsPerChild 100
ThreadLimit 100
```

```
PerlModule Apache::DBI
PerlRequire /home/MyApache2/startup.pl
```

```
<Location /qst>
    SetHandler perl-script
    PerlResponseHandler MyApache2::QST
</Location>
```

close apache2.conf

run:  
sudo vi /etc/apache2/sites-enabled/000-default.conf

Paste the following in under the DocumentRoot directive:

```
PerlInterpStart      20
PerlInterpMax         100
PerlInterpMaxSpare    20
```

close 000-default.conf

run:  
sudo apt-get install perl-doc  
sudo perl -MCPAN -e 'install Bundle::DBI'

2. install mysql (installs latest version 8.x):

run:  
sudo apt-get update  
sudo apt-get install mysql-server

- if it did not ask for a password when installing mysql (version 8.x) run:

```
sudo mysql -u root -p
or
mysql -u root -p
```

Press Enter

```
mysql>ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'your_new_password_here';
```

*then:*

```
mysql>CREATE DATABASE qst;
```

If MySQL 8.x:

```
mysql>CREATE USER 'qstuser'@'localhost' IDENTIFIED BY 'Qstyreg#389';
mysql>grant all on qst.* to qstuser@localhost;
```

```
mysql>CREATE USER 'qst'@'localhost' identified by 'Qst#captain2';
mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO qst@localhost;
```

else if prior version:

```
mysql>grant usage on *.* to qstuser@localhost identified by 'Qstyreg#389';
mysql>grant all privileges on qst.* to qstuser@localhost;
mysql>grant usage on *.* to qst@localhost identified by 'Qst#captain2';
mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO 'qst'@'localhost';
```

then log out of the MySQL shell:

```
mysql>exit;
```

and type the following in the terminal window:

```
mysql -u qstuser -p qst < //'path to directory you unzipped qst to'/qst_gpl/qst.sql
```

```
go to /etc/mysql/mysql.conf.d  
open mysqld.conf
```

```
under the [mysqld] section,  
replace:
```

```
#socket = /var/run/mysqld/mysqld.sock  
with:  
socket = /run/mysqld/mysqld.sock
```

Save the file.

3. run:

```
sudo apt-get update  
sudo cpan Email::Valid  
sudo apt-get install libcrypt-pbkdf2-perl  
sudo apt-get install libdbd-mysql-perl  
sudo cpan -i Net::DNS  
sudo cpan -i Net::LDAP  
sudo cpan -i Mail::Address  
sudo cpan -i MIME::Base64  
sudo cpan -i Archive::Zip  
sudo cpan -i Exporter  
sudo perl -MCPAN -e 'install Apache::DBI'
```

Copy the contents of //'path to directory you unzipped qst to'/qst\_gpl/qst directory to /var/www/qst/

Copy the contents of //'path to directory you unzipped qst to'/qst\_gpl/schools directory to /var/www/qst/schools

Restart Apache:

```
sudo service apache2 stop  
sudo service apache2 start
```

Go to localhost in your web browser and enter the info. below:

```
username: admin  
pass: qstcaptain
```

!!!!!! Change the password!

Click on Server -> Administration -> Head Administrator and select Password. Change the password and Save it.

```
-----  
-----
```

To Use LDAP:

open QST.pm

```
uncomment line 2541 & 2625 $compare_password =  
&authenticate_ldap("username", "$INPUT{user}", "password", "$INPUT{pass}");
```

```
comment out line 2542 & 2626 $compare_password =  
&compare_password("password", "$INPUT{pass}", "hash", "$row[2]");  
If windows uncomment Net::LDAP at line 34.
```

On linux uncomment line 15 use Net::LDAP.  
Make appropriate changes to sub authenticate\_ldap section beginning at line 3115  
Create an admin user in LDAP with the same password as in QST.  
Create your users in LDAP with passwords and in QST as 0 for their password.  
Stop then start apache.

-----  
To use SSL:

Run the command:  
dpkg -S mod\_ssl.so

Chances are that it will display something like:

apache2.2-common: /usr/lib/apache2/modules/mod\_ssl.so

It means that mod\_ssl is already installed on your system, as it does not come in a separate package, but it is bundled in apache2.2-common.

Run:  
a2enmod ssl  
sudo service apache2 reload

go to <https://letsencrypt.org/> to get a certificate:  
Use Certbot ACME client.

\*\*\*\*\*  
\*\*\*\*\*

## AWS Install

Choose Ubuntu 20.x as OS.

- only install OS
- Do NOT have Apache or MySQL installed (you will install it).
- Follow the Ubuntu/Linux instructions above.

\*\*\*\*\*  
\*\*\*\*\*

## Mac Install

- This was done on a Mac mini M1 running Mac OS 13.0 Ventura.
- We used Homebrew and Perlbrew so it should work for other versions of Mac.  
Let us know [qstsupport@shaw.ca](mailto:qstsupport@shaw.ca) if more documentation is required for other versions.

In your terminal.

Run the following command first to install macOS Command Line Tools  
- if your Mac already has CLT installed you can skip this part  
xcode-select --install

Turn off the apache already there, run:  
sudo apachectl stop

Install Homebrew for:  
Ventura, Monterey run:

```
/bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

MacOS Catalina, macOS Mojave, and MacOS Big Sur run:

```
/bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/master/install.sh)"
```

MacOS High Sierra, Sierra, El Capitan, and earlier run:

```
/usr/bin/ruby -e "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/master/install)"
```

It will tell you to run two commands to add Homebrew to your PATH, run them.

To permanently set PATH on Mac, all you have to do is open either bash files  
(.bashrc or .bash\_profile)  
or zsh files (.zshrc or .zsh\_profile) under /User/your user name/.zshrc  
or .zsh\_profile and add the  
following to it:

```
export PATH=/opt/homebrew:$PATH
```

Close file.

Run:

```
brew analytics off
```

Install Perl Brew run:

```
\curl -L https://install.perlbrew.pl | bash
```

To install a perl release with threads, and use it as default in the current  
shell  
and in all future shell sessions (takes a bit of time).

Run:

```
perlbrew install perl-5.30.0 --thread
perlbrew switch perl-5.30.0
```

Install apache 2.4.xx from homebrew, run:

```
brew install httpd
```

```
-----
DocumentRoot is /opt/homebrew/var/www/qst
Log files are in /opt/homebrew/var/log/httpd/
Configuration /opt/homebrew/etc/httpd/httpd.conf
-----
```

Then install libapreq2-2.17 library.

Go to the directory you unzipped qst into, you will see libapreq2-2.17.tar.gz  
there.

Run:

```
tar xvfz libapreq2-2.17.tar.gz
cd libapreq2-2.17
./configure
make
make install
```

Run:

```
brew services stop httpd
brew services start httpd
```

Install svn, run:

```
brew options subversion
brew install subversion
```

Install mod\_perl 2, run:

```
svn checkout https://svn.apache.org/repos/asf/perl/modperl/trunk/ mod_perl-2.0
cd mod_perl-2.0
perl Makefile.PL MP_CC_OPTS=-std=gnu89
make
make install
```

Copy mod\_perl.so in

```
/opt/homebrew/Cellar/httpd/2.4.54_1/lib/httpd/modules/mod_perl.so
to /opt/homebrew/lib/httpd/modules
```

Copy our mac\_httpd.conf (in directory you unzipped qst into) to

/opt/homebrew/etc/httpd/httpd.conf and run:

```
brew services stop httpd
brew services start httpd
```

Copy all the files:

```
cd 'to directory you unzipped qst into'
run:
cp -r qst /opt/homebrew/var/www
cp -r schools /opt/homebrew/var/www/qst
```

Make directory Apache2 under /opt/homebrew/lib/httpd/modules

cd 'to directory you unzipped qst into'

Run:

```
cp mac_QST.pm /opt/homebrew/lib/httpd/modules/Apache2/QST.pm
cp mac_startup.pl /opt/homebrew/lib/httpd/modules/startup.pl
```

```
cd /opt/homebrew/lib/httpd/modules
chmod 711 startup.pl
```

```
cd /opt/homebrew/lib/httpd/modules/Apache2
sudo chown your_user QST.pm
sudo chmod 715 QST.pm
```

Make directory photos under /opt/homebrew/var/www

Run:

```
sudo perl -MCPAN -e 'install Bundle::DBI'
brew install mysql@5.7
```

Add the following to /USERS/'your user'/.zshrc file:

```
export PATH=/opt/homebrew/opt/mysql@5.7/bin:$PATH
```

Exit your terminal, open another terminal (so it sets the path above for you).

Run:

```
brew services start mysql@5.7
```

```
sudo mysql -uroot
```

```
mysql>ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY
'your_new_password_here';
mysql>CREATE DATABASE qst;
mysql>grant usage on *.* to qstuser@localhost identified by 'Qstyreg#389';
mysql>grant all privileges on qst.* to qstuser@localhost;
mysql>grant usage on *.* to qst@localhost identified by 'Qst#captain2';
mysql>grant SELECT, INSERT, DELETE,UPDATE ON qst.* TO 'qst'@'localhost';
mysql>exit;
```

Run:

```
mysql -u qstuser -p qst < //path to directory you unzipped qst
to'/qst_linux/qst.sql
```

Run:

```
brew install openssl mysql-connector-c
```

Open /opt/homebrew/opt/mysql@5.7/bin/mysql\_config and go to the line which begins with

```
$libs="-L$pkglibdir"
```

and below it add:

```
libs="$libs -L/opt/homebrew/opt"
```

Save the file.

Run:

```
PATH="$(brew --prefix mysql-client)/bin:$PATH"
```

```
export LIBRARY_PATH=$(brew --prefix openssl)/lib:$LIBRARY_PATH
```

```
sudo cpan -i Email::Valid
```

```
sudo cpan -i Crypt::PBKDF2
```

```
sudo cpan -i Bundle::libnet
```

```
sudo cpan -i DBI
```

```
sudo cpan -i DBD::mysql
```

```
sudo cpan -i Net::DNS
```

```
sudo cpan -i Mail::Address
```

```
sudo cpan -i MIME::Base64
```

```
sudo cpan -i Archive::Zip
```

```
sudo cpan -i Exporter
```

```
sudo perl -MCPAN -e 'install Apache::DBI'
```

```
brew services stop httpd
```

```
brew services start httpd
```

Go to localhost in your web browser and enter the info. below:

username: admin

pass: qstcaptain

!!!!!! Change the password!

Click on Server -> Administration -> Head Administrator and select Password.

Change the password and Save it.

\*\*\* QST should be run encrypted for true security.